

What is claimed is:

1 1. A method for reducing power consumption in a computer peripheral device, in at least
2 one or more computer peripheral devices, each having a respective unique function, connected to a
3 computer so as to operate in conjunction with the computer, the method comprising steps of:

4 (a) determining whether or not the peripheral device has a first power save mode;

5 (b) determining whether or not the computer is turned on, if it is determined that the
6 peripheral device has the first power save mode, characterized in that it is determined that the
7 computer is not turned on when the computer does not receive power, when the computer is in a
8 second power save mode or when the connection between the computer and the peripheral device
9 is cut off;

10 (c) determining whether or not a predetermined time period has elapsed since the
11 peripheral device has last performed its unique function, if it is determined that the computer is
12 turned on; and

13 (d) making the peripheral device enter into the first power save mode, if it is determined
14 that the predetermined time period has elapsed, or that the computer is not turned on, wherein the
15 first power save mode corresponds to a state in which the peripheral device consumes less power
16 than when the peripheral device is in a normal operating state.

1 2. The method of claim 1, further comprising steps of:

2 (e) determining whether the peripheral device was made to enter the first power save
3 mode because the computer is not turned on;

4 (f) continuously determining whether or not the computer is turned on, when it is

5 determined in step (e) that the peripheral device was made to enter the first power save mode
6 because the computer is not turned on; and

7 (g) making the peripheral device exit from the first power save mode, when it is
8 determined in step (f) that the computer is turned on.

1 3. The method of claim 1, further comprising a step of:

2 (e) determining whether or not the user has requested that the peripheral device enter into
3 the first power save mode if it is determined in step (c) that the predetermined time period after the
4 peripheral device last performing its unique function has not elapsed, and returning to step (c) if it
5 is determined that the user has not requested that the peripheral device enter into the first power save
6 mode; and

7 (f) performing the step (d), if it is determined in step (e) that the user requests that the
8 peripheral device enter into the first power save mode.

1 4. The method of claim 3, further comprising steps of:

2 (g) after step (d), determining whether the peripheral device was made to enter the first
3 power save mode because the computer is not turned on;

4 (h) continuously determining whether or not the computer is turned on, when it is
5 determined in step (g) that the peripheral device was made to enter the first power save mode
6 because the computer is not turned on; and

7 (i) making the peripheral device exit from the first power save mode, when it is
8 determined in step (h) that the computer is turned on.

1 5. The method of claim 4, further comprising steps of:

2 (j) determining whether the peripheral device was made to enter the first power save
3 mode because the predetermined time period had elapsed since the peripheral device has last
4 performed its unique function, when it is determined in step (g) that the peripheral device was not
5 made to enter the first power save mode because the computer is not turned on;

6 (k) continuously determining whether or not the computer requests the peripheral device
7 to perform its unique function, when it is determined that the peripheral device was made to enter
8 the first power save mode because the predetermined time period had elapsed since the peripheral
9 device has last performed its unique function; and

10 (l) making the peripheral device exit from the first power save mode, when it is
11 determined in step (k) that the computer requests the peripheral device to perform its unique
12 function.

1 6. The method of claim 5, further comprising steps of:

2 (m) identifying the cause which made the peripheral device enter into the first power save
3 mode to be due to the user's request in step (e), and continuously determining whether or not the user
4 requests the peripheral device to exit from the first power save mode; and

5 (n) making the peripheral device exit from the first power save mode, when it is
6 determined in step (m) that the user requests the peripheral device to exit from the first power save
7 mode.

1 7. A computer peripheral device consuming less power in a system having a computer,
2 at least one or more peripheral devices, each having a respective unique function, operating in

3 conjunction with the computer, and communication cables connecting the computer with the
4 peripheral devices, the computer peripheral device comprising:

5 a power unit having a primary part for converting alternating current (AC) power input from
6 the outside into direct current (DC) power, and a secondary part for providing the DC power as the
7 power for the peripheral components, in response to a power control signal;

8 a counter for performing a counting operation in response to a counting-start signal, and
9 outputting the counted result;

10 a comparison unit for comparing the counted result with a predetermined time period, and
11 outputting the compared result; and

12 a control unit for outputting the power control signal in response to the compared result or
13 in response to a power identification signal indicative of a power state of the computer, which has
14 a predetermined level when the computer is turned on and is input from the communication cable,
15 said control unit checking whether or not the unique function of the peripheral device is performed,
16 and outputting the counting-start signal when it is determined that the unique function of the
17 peripheral device is performed.

1 8. The computer peripheral device of claim 7, wherein the control unit outputs the power
2 control signal having a first logic level in response to a power save request signal or a second logic
3 level in response to a power save exit request signal input from the outside.

1 9. The computer peripheral device of claim 7, wherein the communication cable is an
2 individual cable, which connects the computer and the respective peripheral device, and the power
3 identification signal is input via one data line among data lines of the individual cable.

4 10. The computer peripheral device of claim 7, wherein the communication cable is a
5 common cable, which commonly connects the computer and at least one or more peripherals, and
6 the power identification signal is input via a voltage bus of the common cable.

1 11. The computer peripheral device of claim 7, wherein the control unit:
2 determines whether or not the peripheral device has a first power save mode;
3 determines whether or not the power identification signal is indicative of the computer being
4 in an on power state, if it is determined that the peripheral device has the first power save mode,
5 characterized in that it is determined that the power identification signal is indicative of the computer
6 being in an off power state when the computer does not receive power, when the computer is in a
7 second power save mode or when the connection between the computer and the peripheral device
8 is cut off;

9 determines whether or not said predetermined time period has elapsed since the peripheral
10 device has last performed its unique function, if it is determined that the power identification signal
11 is indicative of the computer being in an on power state; and

12 makes the peripheral device enter into the first power save mode, if it is determined that the
13 predetermined time period has elapsed, or that the power identification signal is indicative of the
14 computer being in an off power state, wherein the first power save mode corresponds to a state in
15 which the peripheral device consumes less power than when the peripheral device is in a normal
16 operating state.

1 12. The computer peripheral device of claim 11, wherein the control unit:
2 determines whether the peripheral device was made to enter the first power save mode

3 because the power identification signal was indicative of the computer being in an off power state;
4 continuously monitors the power identification signal to determine when the power
5 identification signal is indicative of the computer being in an on power state, when it is determined
6 that the peripheral device was made to enter the first power save mode because the peripheral device
7 was made to enter the first power save mode due to the power identification signal indicating that
8 the computer was in an off power state; and
9 makes the peripheral device exit from the first power save mode, when it is determined that
10 the power identification signal is indicative of the computer being in an on power state.

1 13. The computer peripheral device of claim 12, wherein the control unit:
2 determines whether the peripheral device was made to enter the first power save mode
3 because the predetermined time period had elapsed since the peripheral device has last performed
4 its unique function, when it is determined that the peripheral device was not made to enter the first
5 power save mode due to the power identification signal indicating that the computer was in an off
6 power state;
7 continuously checks for a computer request requesting the peripheral device perform its
8 unique function, when it is determined that the peripheral device was made to enter the first power
9 save mode because the predetermined time period had elapsed since the peripheral device has last
10 performed its unique function; and
11 makes the peripheral device exit from the first power save mode, when it is determined that
12 the computer requests the peripheral device to perform its unique function.

1 14. The computer peripheral device of claim 13, wherein the control unit:

2 determines whether or not the user has requested that the peripheral device enter into the first
3 power save mode; and

4 makes the peripheral device enter the first power save mode, when it is determined that the
5 user requests that the peripheral device enter into the first power save mode.

1 15. The computer peripheral device of claim 14, wherein the control unit:

2 determines whether or not the user has requested that the peripheral device exit from the first
3 power save mode; and

4 makes the peripheral device exit the first power save mode, when it is determined that the
5 user requests that the peripheral device exit from the first power save mode.